

Retained Placenta

Retained placental products can result in potential infection & hemorrhage requiring simultaneous assessment & management.

ANESTHETIC CONSIDERATIONS:

1. Considerations of the pregnant patient (except 2nd passenger):
 - potentially difficult airway
 - rapid desaturation due to increased O₂ consumption and decreased FRC
 - aspiration risk and rapid sequence induction
 - physiologic changes of pregnancy
2. Requirement for uterine relaxation and surgical removal of placenta
3. Risk of maternal morbidity & mortality

ANESTHETIC GOALS:

1. Maintain adequate circulating blood volume and coagulation factors
2. Clear lines of communication with surgical team regarding ongoing HD & coagulation status

HISTORY

- Diagnosis supported by soft post-partum uterus and vaginal bleeding (however, significant engorged uterus can contain ~1L of blood w/out vaginal bleeding)
- Hx / PE may be limited d/t emergent conditions and should be directed to evaluating urgency of intervention:
 - On-going blood loss
 - Maternal hypotension
 - **Any of these 2 = urgent / emergency and may r/o RA**
- AMPLE at minimum, if time permits, standard obstetrical anesthetic history as well as:
 - Assessment for placenta accreta:
 - 5% of pts w/ previa have accreta
 - 25% of pts w/ previa and 1 prior C/S have accreta
 - 50% of pts w/ previa and 2 prior C/S have accreta
 - 67% of pts w/ previa and > 3 prior C/S have accreta
 - Assessment for other causes of PPH = "T's":
 - Tone
 - Trauma
 - Thrombosis
 - Turn out of the uterus

PHYSICAL

- **HEENT**
 - Mallampati class, ease of intubation
- **CVS**
 - Tachycardia, hypotension

INVESTIGATIONS

- **Labs**
 - CBC for Hb
 - X-match
 - DIC investigation: PLT, INR, PTT, fibrinogen, FDP
- **Imaging**
 - U/S can be useful in detecting retained placental products

OPTIMIZATION

- Maternal resuscitation:
 - Supplemental O₂
 - IV Fluid Bolus
 - Ephedrine / phenylephrine for hypotension (in addition to volume)
 - Uterine relaxation agents:
 - Inhalational agent > 1.0 MAC - necessitates GA
 - NTG:
 - 100 mcg bolus results in relaxation w/in 30-45 seconds and lasting up to 120 seconds
 - Severe hypotension can occur but is usually transient
 - Repeat dosing may cause ST-T wave changes
 - OR prep:
 - Mobilization of resources - RNs, surgeon, prep & drape
 - Aspiration prophylaxis
 - Topicalization of A/W if AFOI likely

ANESTHETIC OPTIONS

- Type of anesthetic will depend on degree of hemorrhage and likelihood of extraction:

- MAC: Nitrous or ketamine & fentanyl (0.1-0.2 mg/kg IV) may allow rapid manual extraction
- Epidural catheter may be used if in situ
- Spinal anesthesia if no LEA in situ
- GETA w/ RSI 1st choice if any ongoing bleeding or HD instability (or AFOI for difficult A/W)

ANESTHETIC SETUP

- **Drugs**
 - Standard emergency drugs
- **Equipment**
 - CAS monitors + 5-lead ECG
 - Will be guided by severity of hemorrhage

MANAGEMENT OF ANESTHESIA

- **Induction**
 - Be prepared for hemorrhage resulting in hypotension post induction - consider ketamine 1-1.5 mg/kg instead of STP for induction
- **Maintenance**
 - Always keep possibility of placenta accreta as possible diagnosis
 - Evaluate urgency and prepare for:
 - Massive blood loss w/:
 - At least 2 large-bore IVs
 - PRBCs
 - Coagulopathy: FFP, PLT, Cryoprecipitate or Factor replacement
 - Requirement for:
 - Clamp uterine arteries
 - Emergent hysterectomy
 - X-clamp aorta
- **Emergence**
 - Awake

DISPOSITION & MONITORING

- Dependent on amount of hemorrhage and transfusion

COMPLICATIONS

- Massive blood loss & need for hysterectomy

PATHOPHYSIOLOGY

- 1% of deliveries
- Prevents uterus from contracting down and arteries of decidua basalis continue to bleed
- Recognize that degree of hemorrhage is often underestimated by RN and MD's
- Blood loss in studies is conflicting, but one study reported average for SVD is 600 cc and C/S is 1000 cc
- Primary PPH occurs w/in first 24 hours and secondary PPH occurs between 24 hours and 6 weeks
- May be associated w/ myocardial ischemia